

May 1, 2003

Mr. William Bertke
Micromatic Operations, Inc.
525 Berne Street
Berne, Indiana 46711

Re: 001-16938
Notice-Only Change to
MSOP 001-11722-00033

Dear Mr. Bertke:

Micromatic Operations, Inc., previously Micro-Precision Textron was issued a Minor Source Operating Permit on June 16, 2000 for hard chrome plating operations. A letter notifying the Office of Air Quality of a change was received on March 19, 2003. The change shall be designated as notice-only change, pursuant to the provisions of 326 IAC 2-6.1-6(d)(13) which involves the addition of emission units of the same type that are already permitted and that will comply with the same applicable requirements. Therefore the permit is hereby changed as follows:

- (a) One (1) Tabletop-Scale Nickel Electroplating Process, using a maximum of ten (10) plating tanks with a current of 10 ampere for each tank;
 - (b) Masking and, solvent cleaning operations with a capacity of 4 wheels per shift;; and
 - (c) Sulfuric acid anodizing operation,
1. Section A.2 of the MSOP will be changed to include the above emission units as follows:
- (1), (2), (4) through (9) no changes
- Item (3) will be deleted , since it will be replaced by the proposed Tabletop-Scale Nickel Plating. Subsequent items will be renumbered accordingly:
- ~~———— (3) ——— One (1) electroless nickel plating operation exhausting to stack 9;~~
- (9) One (1) Tabletop-Scale Nickel Electroplating Process, using a maximum of ten (10) plating tanks with a current of 10 ampere for each tank;**
 - (10) Masking and, solvent cleaning operations with a capacity of 4 wheels per shift; and**
 - (11) Sulfuric acid anodizing operation.**

2. The new emission units will also be added in Section D.1 facility description box as follows:

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description

- (1) One (1) Hard Chromium Electroplating Operation with a maximum cumulative rectifier capacity of 11,760,000 Ampere-hours (A-hr) consisting of:
 - (a) Two (2) hard chromium electroplating tanks, identified as HC-1 and HC-2, equipped with a Fumetrol® fume suppressant, and exhausting to one (1) stack, identified as 5;
- (2) One (1) sulfuric acid anodizing operation exhausting to stack 9; ~~and~~
- (9) One (1) Tabletop-Scale Nickel Electroplating Process, using a maximum of ten (10) plating tanks with a current of 10 ampere for each tank;**
- (10) Masking and, solvent cleaning operations with a capacity of 4 wheels per shift; and**
- (11) Sulfuric acid anodizing operation.**

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

All conditions of the permit shall remain unchanged and in effect. Please attach a copy of this letter and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Aida De Guzman at (800) 451-6027, press 0 and ask for Aida De Guzman or extension (3-4972), or dial (317) 233-4972.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

APD

cc: File - Adams County
U.S. EPA, Region V
Adams County Health Department
Air Compliance Section Inspector - Ryan Hillman
Compliance Data Section - Karen Nowak
Administrative and Development
Technical Support and Modeling - Michele Boner

MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

**Micromatic Operations, Inc.
525 Berne Street
Berne, Indiana 46711**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 001-11722-00033	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: June 6, 2000

Review Request No.: 001-14022, issued on March 15, 2002
First Notice-Only Change No.: 001-16760, issued on February 21, 2003

Second Notice-Only Change No.: 001-16938	Affected Pages: 4, 5, 14
Issued by: Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: May 1, 2003

SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary small hard chromium electroplating manufacturing facility.

Authorized Individual: Mr. William Bertke
Source Address: 525 Berne Street, Berne, Indiana 46711
Mailing Address: 525 Berne Street, Berne, Indiana 46711
Phone Number: (219) 589-2136
SIC Code: 3471, 3569
County Location: Adams
County Status: Attainment for all criteria pollutants
Source Status: Minor Source Operating Permit
Minor Source, under PSD or Emission Offset Rules;
Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

- (1) One (1) Hard Chromium Electroplating Operation with a maximum cumulative rectifier capacity of 11,760,000 Ampere-hours (A-hr) consisting of:
 - (a) Two (2) hard chromium electroplating tanks, identified as HC-1 and HC-2, equipped with a Fumetrol® fume suppressant, and exhausting to one (1) stack, identified as 5;
- (2) One (1) sulfuric acid anodizing operation exhausting to stack 9;
- (3) One (1) paint booth, identified as West paint booth, using dry filters with a 99% control efficiency for overspray control, and exhausting to stack 23;
- (4) One (1) paint booth, identified as North paint booth, using dry filters with a 99% control efficiency for overspray control, and exhausting to stack 25;
- (5) Welding operation; two (2) metal inert gas (MIG) stations, each with a maximum wire consumption rate of 6.3 pounds of wire per hour (lb wire/hr), one (1) tungsten inert gas (TIG) station, with a maximum wire consumption rate of 6.0 lb wire/hr, one (1) oxyacetylene flame cutter, with a maximum cutting rate of 6 inches per minute, and one (1) plasma cutter, with a maximum cutting rate of 10 inches per minute;
- (6) Three (3) pneumatic blasters identified as # 14, # 15 and # 16;

- (7) Miscellaneous combustion units consisting of various natural gas fired heaters and one (1) waste oil dryer;
- (8) Degreasing operation;
- (9) One (1) Tabletop-Scale Nickel Electroplating Process, using a maximum of ten (10) plating tanks with a current of 10 ampere for each tank;
- (10) Masking and, solvent cleaning operations with a capacity of 4 wheels per shift; and
- (11) Sulfuric acid anodizing operation.

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description

- (1) One (1) Hard Chromium Electroplating Operation with a maximum cumulative rectifier capacity of 11,760,000 Ampere-hours (A-hr) consisting of:
 - (a) Two (2) hard chromium electroplating tanks, identified as HC-1 and HC-2, equipped with a Fumetrol® fume suppressant, and exhausting to one (1) stack, identified as 5;
- (2) One (1) sulfuric acid anodizing operation exhausting to stack 9;
- (9) One (1) Tabletop-Scale Nickel Electroplating Process, using a maximum of ten (10) plating tanks with a current of 10 ampere for each tank;
- (10) Masking and, solvent cleaning operations with a capacity of 4 wheels per shift; and
- (11) Sulfuric acid anodizing operation.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

D.1.1 General Provisions Relating to HAPs [326 IAC 20-1-1][40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 63, Subpart N. The permittee shall comply with the requirements of this condition on and after the compliance date for the tanks.

D.1.2 Chromium Electroplating and Anodizing NESHAP [326 IAC 20-8-1] [40 CFR Part 63, Subpart N]

The provisions of 40 CFR 63, Subpart N - National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks, which are incorporated by reference as 326 IAC 20-8-1, apply to tanks HC-1 and HC-2. A copy of this rule is attached. The permittee shall comply with the requirements of this condition on and after the compliance date for the tanks.

D.1.3 Chromium Emissions Limitation [40 CFR 63.342(c)] [40 CFR 63.343(a)(1)&(2)]

- (a) The emission limitations in this condition apply only during tank operation, and also apply during periods of startup and shutdown as these are routine occurrences for tanks subject to 326 IAC 20-8-1. The emission limitations do not apply during periods of malfunction.
- (b) The hard chromium electroplating tanks, identified as HC-1 and HC-2 above, are considered a small, existing hard chromium electroplating operation. During tank operation, the Permittee shall control chromium emissions discharged to the atmosphere from the tanks by not allowing the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed 0.03 mg/dscm [1.3×10^{-5} gr/dscf].

D.1.4 Work Practice Standards [40 CFR 63.342(f)]

The following work practice standards apply to tanks HC-1 and HC-2:

- (a) At all times, including periods of startup, shutdown, malfunction and excess emissions, the Permittee shall operate and maintain tanks HC-1 and HC-2, including the Fumetrol® mist suppressant and monitoring equipment, in a manner consistent with good air pollution control practices, consistent with the Operation and Maintenance Plan (OMP) required by Condition D.1.6.
- (b) Malfunctions and excess emissions shall be corrected as soon as practicable after their occurrence in accordance with the OMP required by Condition D.1.6.

Source Name: Micromatic Operations, Inc.
Source Address: 525 Berne Street, Berne, Indiana 46711
Mailing Address: 525 Berne Street, Berne, Indiana 46711
Operating Permit: MSOP 001-11722-00033
Issuance Date: June 6, 2000
2nd Notice-only change: 001-16938

The source engages in hard chromium electroplating. It proposes to install one (1) Tabletop-Scale Nickel Electroplating Process using a maximum of ten (10) plating tanks with a current of 10 ampere for each tank; which is used to apply abrasive materials unto facility honing products.

POTENTIAL TO EMIT CALCULATIONS:

(a) Masking Operation:

VOC Emissions:

$$\begin{aligned}
 (\text{Red Stop-Off (Masking)}) &= 0.0625 \text{ gal/wheel} * 4 \text{ wheels/shift} * 3 \text{ shift/day} * \\
 &= 8.15 \text{ lbs/gal} * 80\% * 365 \text{ days/yr} * \text{ton/2000 lbs} \\
 &= 0.892 \text{ tons VOC/year}
 \end{aligned}$$

HAP Emissions:

$$\begin{aligned}
 (\text{MEK from Red Stop-Off (Masking)}) &= 0.0625 \text{ gal/wheel} * 4 \text{ wheels/shift} * 3 \text{ shift/day} * \\
 &= 8.15 \text{ lbs/gal} * 40.2\% * 365 \text{ days/yr} * \text{ton/2000 lbs} \\
 &= 0.45 \text{ tons/year}
 \end{aligned}$$

(b) Solvent Cleaning Operation:

VOC Emissions:

$$\begin{aligned}
 (\text{Clean-up solvent}) &= 0.1 \text{ gal/shift} * 3 \text{ shifts/day} * 365 \text{ days/yr} \\
 &= 6.885 \text{ lbs/gal} * 100\% * \text{ton/2000 lbs} \\
 &= 0.377 \text{ ton VOC/year}
 \end{aligned}$$

HAP Emissions:

$$\begin{aligned}
 (\text{MEK from Clean-up solvent}) &= 0.1 \text{ gal/shift} * 3 \text{ shifts/day} * 365 \text{ days/yr} \\
 &= 6.885 \text{ lbs/gal} * 100\% * \text{ton/2000 lbs} \\
 &= 0.377 \text{ ton/year}
 \end{aligned}$$

Combined HAPs Emissions:

$$\begin{aligned}
 (\text{Red Stop-Off (Masking)}) &= 0.0625 \text{ gal/wheel} * 4 \text{ wheels/shift} * 3 \text{ shift/day} * \\
 &= 8.15 \text{ lbs/gal} * 46.4\% * 365 \text{ days/yr} * \text{ton/2000 lbs} \\
 &= 0.52 \text{ tons/year}
 \end{aligned}$$

$$\begin{aligned}
 (\text{MEK Clean-up solvent}) &= 0.1 \text{ gal/shift} * 3 \text{ shifts/day} * 365 \text{ days/yr} \\
 &= 6.885 \text{ lbs/gal} * 100\% * \text{ton/2000 lbs} \\
 &= 0.377 \text{ ton/year}
 \end{aligned}$$

- (c) Proposed Nickel Electroplating Operations :
 Using AP-42, Chapter 12.20-13, Equation #1 to determine emission factor.

$$EF_{\text{nickel}} = 3.3 \times 10^{-7} \times (EE_{\text{nickel}}/e_{\text{nickel}}) \times C_{\text{nickel}} \times D_{\text{nickel}}$$

Where:

$$\begin{aligned} EF_{\text{nickel}} &= \text{emission factor for nickel plating, grains/dscf} \\ EE_{\text{nickel}} &= \text{electrochemical equivalent for nickel "m", A-hr/mil-ft}^2 \\ &= 19.0 \text{ Amp-hr/mil-ft}^2 \text{ per table 3-1 of 7/96 EPA Report on AP-42} \\ e_m &= \text{cathode efficiency for nickel "m" percent} \\ &= 97 \% \text{ worst case range in AP-42, Chapter 12.20-9 from 93\% to 97\%.} \\ C_m &= \text{bath concentration for nickel "m" oz/gal} \\ &= 11.0 \text{ oz/gal per source's operating instructions} \\ D_m &= \text{current density for metal "m", A/ft}^2 \\ &= 5.04 \text{ A/ft}^2 \text{ per source's operating instructions} \end{aligned}$$

$$\begin{aligned} EF_{\text{nickel}} &= 3.3 \times 10^{-7} \times (EE_{\text{nickel}}/e_{\text{nickel}}) \times C_{\text{nickel}} \times D_{\text{nickel}} \\ &= 3.3 \times 10^{-7} \times (19.0/0.97) \times 11.0 \times 5.04 \\ &= 0.000374 \text{ grains/dscf} \times \text{dscf}/0.01 \text{ A-hr} \quad (\text{per AP-42 table 12.20-4 to convert grains/A-hr to grains/dscf}) \\ &= 0.0374 \text{ grains/A-hr} \times 1.425 \times 10^{-4} \text{ lb/grain} \\ &= 5.3 \times 10^{-6} \text{ lb/A-hr} \end{aligned}$$

Activity rate assumes a maximum use of 10 tanks simultaneously with a current of 10 amp applied to each tank for every hour of usage. Using 24 hrs/day and 365 days/year in the PTE calculations. There are no emission control employed.

Nickel/PM/PM10 Emissions:

$$\begin{aligned} E_{\text{PTE}} &= A \times EF \times (1-ER/100) \\ &= (10 \text{ tanks} \times 10 \text{ Amp/tank}) \times 5.3 \times 10^{-6} \text{ lb/Amp-hr} \times (1- 0/100) \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lb} \\ &= 0.0023 \text{ ton/year} \end{aligned}$$

- (d) Proposed Sulfuric Acid Operation:

AP-42 Table 12.20-2

Use chromic acid anodizing for worst case scenario (chrome has low cathode efficiency)

EF = 4.2 grains/hr-ft² of tank surface area

Sulfuric acid tank surface measures 18 3/8" x 18 3/8"

Activity rate = 1 tank * 2.346 ft² per hr of usage

There are no emission control employed.

PM/PM10 Emissions:

$$\begin{aligned}
 E_{PTE} &= A * EF * (1-ER/100) \\
 &= 2.346 \text{ ft}^2 * 4.2 \text{ gr/hr-ft}^2 * (1- 0/100) \\
 &= 9.853 \text{ grains/hr} * 1.427 \times 10^{-4} \text{ lb/gr} * 8760 \text{ hrs/yr} * \text{ton}/2000 \text{ lb} \\
 &= 0.0062 \text{ ton /yr}
 \end{aligned}$$

- (e) Existing Sulfuric Acid Operation:
This operation's emission was not quantified in previous permits.

AP-42 Table 12.20-2

Use chromic acid anodizing for worst case scenario (chrome has low cathode efficiency)
EF = 4.2 grains/hr-ft² of tank surface area

Sulfuric acid tank surface measures 30" x 35.5"

Activity rate = 1 tank * 7.4 ft² per hr of usage

There are no emission control employed.

PM/PM10 Emissions:

$$\begin{aligned}
 E_{PTE} &= A * EF * (1-ER/100) \\
 &= 7.4 \text{ ft}^2 * 4.2 \text{ gr/hr-ft}^2 * (1- 0/100) \\
 &= 31.08 \text{ grains/hr} * 1.427 \times 10^{-4} \text{ lb/gr} * 8760 \text{ hrs/yr} * \text{ton}/2000 \text{ lb} \\
 &= 0.0194 \text{ ton /yr}
 \end{aligned}$$

SUMMARY OF POTENTIAL TO EMIT (TONS/YEAR)				
OPERATION	PM/PM10	VOC	SINGLE HAP	COMBINED HAPS
MASKING		0.892	0.45	0.52
SOLVENT CLEANING		0.377	0.377	0.377
NICKEL PLATING	0.0023	0.0	0.0023	0.0023
PROPOSED SULFURIC ACID OPERATION	0.0062	0.0	0.0	0.0
EXISTING SULFURIC ACID OPERATION	0.0194	0.0	0.0	0.0
TOTAL	0.028	1.27	0.8323	0.9023

326 IAC 6-3 (Particulate Emissions Limit)

The Nickel Plating nor the Sulfuric Acid Operation is subject to this rule, as the individual or combined potential to emit PM is less than 0.551 pound per hour (2.7 tons/year).

No other rules apply.